

stopped heart beating for five days when it started on its own again.

The heart was found to beat faster, pumping more blood to lungs and tissues, at high altitudes.

The \$60,000,000, 500-bed clinical center of the Public Health Service opened.

The 1953 Nobel Prize in medicine was awarded jointly to Dr. Fritz A. Lipmann, Harvard, and Dr. Hans Adolf Krebs, Sheffield, England.

#### PSYCHIATRY-PSYCHOLOGY

### Research Team Measures Combat's Effects at Front

For the first time, a research team went into the combat area and obtained measures of the physical and mental consequences of combat stress; important effects were found to be dehydration and a serious reduction in adult white blood cells.

The chemical process involved in night vision was duplicated in the laboratory and one of the chemicals involved for daylight vision, cyanopsin, was produced from an extract of dark-adapted rods and the cones from chicken eye retinas.

Several objective tests were found to be promising for the measurement of temperament, including a color film to test for the dominance of form over color perception or the reverse.

When an image is kept in exactly the same place on the eye's retina, it soon vanishes; when natural eye movements cause the image to shift, fine lines tend to fade but reappear, although heavy lines remain steady.

New experiments showed clearly that complete darkness is best for dark adaptation, but that red goggles now used in the armed services do well enough for practical purposes.

Individuals can learn to recognize at least 10,000 distinct odors and can detect fantastically tenuous odors, it was found, but they are quite poor at distinguishing slight differences in intensity of smells.

Two kinds of pain, pricking and burning, follow the same nerve pathways to the brain, it was determined; a finding important to surgeons performing nerve-blocking operations to relieve intractable pain.

Recorded messages such as telephone weather prediction were speeded up in transmission as much as two and a half times without loss of intelligibility by a system of cutting and splicing the recording tape.

The part of the brain that controls appetite was located in the hypothalamus at the base of the brain.

Individuals with high scores on intelligence tests do even better as they grow older, retesting after an interval of 30 years indicated.

Little boys should be six months older when they start school than are little girls, tests of maturity on children indicated; this would save about two per cent on the cost of education.

Follow-up study of individuals, who as children were placed in "opportunity rooms" for mental deficiency, showed they make a much better adjustment to life than has been supposed and their children, if any, go through school with little or no retardation.

An Institute of Human Variation was established to study what biological and social factors are responsible for producing differences between individuals.

Few people act strictly according to their own prejudices, and many people live in a remarkably strict self-imposed segregation from other groups; these were preliminary findings of an eight-year study of intergroup relations.

Production increases by more than a third when workers are grouped so that those who like each other are together, it was demonstrated.

Special linguistic talent or very high intelligence was shown to be not necessary to learn a foreign language.

Repeated failure and frightening experience will cause even an intelligent dog to stop learning, experiments showed.

Mice defeated repeatedly in fights with other mice developed "combat fatigue," a finding promising that these animals may be used in the laboratory to throw light on the causes of combat breakdown in human soldiers.

A method was devised for recording the brain waves of a patient and a motion picture of his movements on the same film.

Jerky eye movements reveal when a sleeping person is dreaming, it was observed.

Many serious highway accidents occur when the driver jams on the brakes or swerves because he "sees" an animal which is not there.

Flashing lights in the eyes and semicarbazide, a drug related to isoniazid, new TB drug, were successfully used to produce convulsions for the shock treatment of schizophrenia.

An elixir of metrazol was found to produce improvement in aged mental patients.

Science News Letter, December 19, 1953

#### TECHNOLOGY

### One-Finger Control in Giant Chemical Factory

➤ WITH ONE-FINGER control the man in charge of operating the new petrochemical plant at Marcus Hook, Pa., can keep up with what is going on at every critical point in the maze of pipes, pumps, heaters and catalysts.

These devices change ordinary gasoline

into pure hydrocarbons for pinpoint use in the chemical industry. The new installation by the Sun Oil Co. has just begun operation.

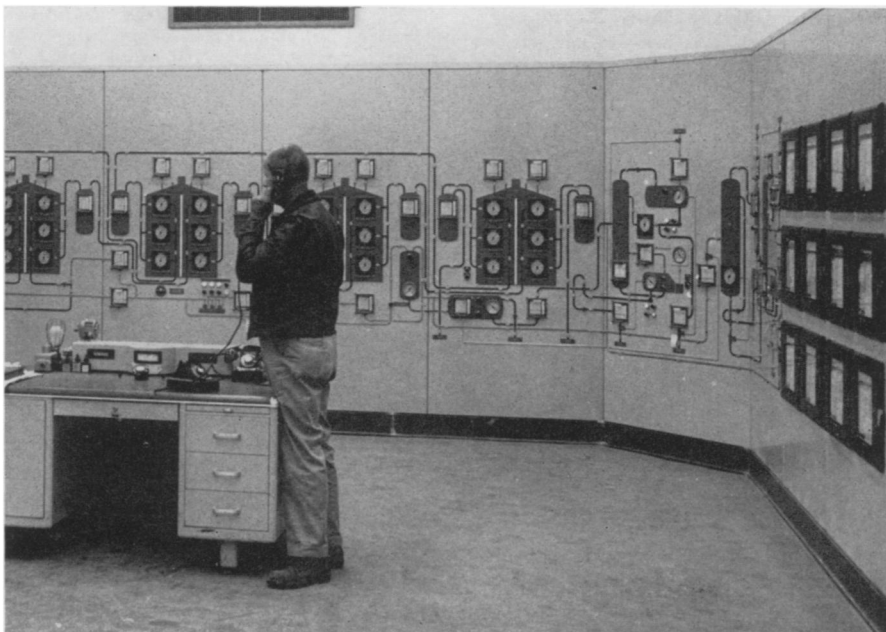
Service men no longer have to climb icy ladders in winter to read control meters, or, in summer, squeeze between tanks, where reactions are taking place at 900 degrees Fahrenheit temperature. Sitting at a desk in the control heart of the new plant, the engineer uses one finger to dial station after station at the desired point on the chemical production line, noting temperatures and pressures, the crucial variables.

Meter readings from the instruments at those stations appear on the glass surface of the panel in front of him, with their messages. A glance tells him whether the chemical reactions are proceeding smoothly, or where to head off trouble before it actually has started.

Arranged to produce either high grade motor gasoline or one of two types of chemicals, the new plant uses 800,000 barrels of straight-run gasoline per month, some of which is casinghead gas. Careful regulation of temperature and pressure in reactors equipped with Houdry catalysts allows the plant to be run either for improved gasoline production or for manufacture of chemicals used for making dacron fiber or for phthalic acid, a valuable chemical of commerce.

Hydrogen, to the quantity of 13,000,000 cubic feet per day, is a by-product of the chemical operation, which produces either benzene and toluene or xylene as the main output.

Science News Letter, December 19, 1953



**FINGER-TIP INDUSTRIAL CONTROL**—By dialing the telephone shown on the desk, the operator at this new plant can be in touch with operations all along the production line. As he dials the different stations, the necessary meter readings appear on the instrument in the middle of the desk.